IES PRS

Application Profile

Application Number: R372A05129

Competition: 84.372A05 **Date Entered:** 6/30/2005

Organization Information

Organization Name: Kentucky Department of Education

Organization Unit: Bureau of Learning Support Services

Organization Address: 1st Fl. CPT
500 Mero Street
Frankfort, KY 40601 **Country:** United States of America

Project Director Name and Information

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Collaboration Organization(s)

Organization Name	Organization Type	State	Country	Key Personnel	Role on Project
Educational Professional Standards Board	State	KY	United States of America	Rogers, Phlip	Oversite Board
				Hibpsham, Terry	Database developer
Council on Posesecondary Education	State	KY	United States of America	Layzell, Thomas	Oversite Board
				Charles, McGrew	CPE Research Advisor
Education Cabinet	State	KY	United States of America	Fox, Virginia	Oversite Board

Application Title

Kentucky Instructional Data System - KIDS

State Identifier not available

Period of Performance **Project Begin Date:** 11/01/2005 **Project End Date:** 09/30/2008

Abstract

1. The title of the project: Kentucky Instructional Data System - KIDS

2. The RFA goal under which the applicant is applying: CFDA 84.372

3. The potential contribution the proposed project will make to the solution of an education problem:

The Commonwealth of Kentucky enjoys a nationally renowned system of assessment and accountability, coupled with a deep technology infrastructure designed around classroom instruction. The Kentucky Education Reform Act of 1990 and The Commonwealth Accountability Testing System have served as models of education reform and school accountability for education leaders nationwide. But the extraordinary advances in education in Kentucky over the past 15 years are in danger of stagnating if we don't act now.

Kentucky has identified two significant shortcomings to its current education scheme:

·¬the inability to track individual student data over time; and

·¬the lack of a consolidated, statewide data-collection and reporting system that can be used by all interested parties to reform classroom instruction, and meet the reporting requirements of NCLB.

The Kentucky Instructional Data System (KIDS) aims to solve those problems. KIDS is a comprehensive data warehouse comprising student demographic, financial, and assessment data supporting an elegant, friendly user workspace, accessible from any Web browser via a secure login. At its core, KIDS will bring together various information silos that are now isolated. Atop that data foundation, KIDS will then build a longitudinal student data tracking system, based upon work already in progress in Kentucky. With that accomplished, Kentucky educators will be able to add student accountability to its already potent school accountability framework.

But to the everyday Kentucky educator and student using KIDS, this complex data ballet will be invisible behind a simple-to-use, elegant, Web-based workspace. The KIDS portal will rely on the underlying data warehouse to serve up a wealth of targeted instructional resources, including standards-based units of study, lesson plans, curriculum maps, assessments, and other educational riches. Further, the portal will offer a collaborative workspace that teachers can use to share best practices, develop test items, and expand their professional skills.

Kentucky is uniquely poised to carry out the KIDS vision thanks to its expert experience in education reform, its broad statewide IT infrastructure, and its enthusiastic, collaborative support. The Kentucky Department of Education, the Kentucky Education Professional Standards Board, the Kentucky Council on Postsecondary Education, the Kentucky Education Cabinet, Kentucky's major universities, and other education entities in Kentucky collectively will create the KIDS system. By bringing longitudinal student tracking and a rich data warehouse to P-16 education, KIDS will ensure that all of Kentucky's schoolchildren are prepared for college and the workforce.

4. The population(s) from which the participants of the study(ies) will be sampled (age groups, race/ethnicity, SES): N/A

5. The proposed research method(s): N/A

6. The proposed intervention if one has been proposed: N/A

Human Subjects: No **Exempt from Regulations:** No **Exemption #:** **Assurance #:**

Exempt Narrative:

Non-Exempt Narrative:

Estimated Funding

Federal:	$2,164,025.00	**Local:**	$0.00		
Applicant:	$0.00	**Other:**	$0.00	**Total:**	$2,164,025.00
State:	$0.00	**Program Income:**	$0.00		

Federal Budget

Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1. Personnel	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2. Fringe Benefits	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
3. Travel	$45,000.00	$45,000.00	$45,000.00	$0.00	$0.00	$135,000.00
4. Equipment	$573,500.00	$85,000.00	$85,000.00	$0.00	$0.00	$743,500.00
5. Supplies	$15,000.00	$15,000.00	$15,000.00	$0.00	$0.00	$45,000.00
6. Contractual	$1,378,000.00	$1,828,000.00	$1,473,000.00	$0.00	$0.00	$4,679,000.00
7. Construction	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
8. Other	$50,000.00	$85,000.00	$85,000.00	$0.00	$0.00	$220,000.00
9. Total Direct Costs	$2,061,500.00	$2,058,000.00	$1,703,000.00	$0.00	$0.00	$5,822,500.00
10. Indirect Costs	$102,525.00	$34,500.00	$34,500.00	$0.00	$0.00	$171,525.00
11. Training Stipends	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
12. Total Costs	$2,164,025.00	$2,092,500.00	$1,737,500.00	$0.00	$0.00	$5,994,025.00

Non-Federal Budget

Budget Categories	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1. Personnel						
2. Fringe Benefits						
3. Travel						
4. Equipment						
5. Supplies						
6. Contractual						
7. Construction						
8. Other						
9. Total Direct Costs						
10. Indirect Costs						
11. Training Stipends						
12. Total Costs						

Application Details

D-U-N-S Number:	(b)(2)	T-I-N:	610600439	Duration (years):	3
Any Federal Debt:	No	Specify:			
Type of Applicant:	State	If Other, Specify:			

Authorized Representative Information

AR Name	AR Address	AR Phone	AR Fax	AR E-mail	Primary:
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Ms. Linda Pittenger	19th Fl CPT 500 Mero Street Frankfort, KY 40601 United States of America	502 564-4772	502 564-6470	lpitteng@kde.state.ky.us	No

Kentucky Instructional Data System – KIDS

The Kentucky Department of Education (KDE) is requesting $6 million over three years from the Institute of Education Sciences to add longitudinal student data tracking to its statewide education data system. Kentucky has a strong history of providing outstanding technology infrastructure and data reporting on a district- and school-building basis. This proposal outlines our plans to bring first-rate data tools and resources, and the ensuing instructional planning and implementation, to the student level. The system we envision will provide data on key learning indicators to track improvement at all grade levels for all students. It will standardize and consolidate statewide data collections to provide greater accessibility of information to school communities, and more robust analytic capabilities for policy-makers and researchers.

Project Need

The Kentucky Department of Education is a national leader in education technology infrastructure development and in statewide school accountability. Since the passage of the Kentucky Education Reform Act in 1990, the Commonwealth has invested more than $600 million in constructing the Kentucky Education Technology System (KETS), a statewide IT infrastructure for public schools. Kentucky is the only state that has implemented both standardized district financial reporting and student/school management data systems in all schools and districts. Kentucky's system links educators across the state, and extends learning resources to rural areas in order to promote educational equity. The original vision for KETS, however, did not include tracking individual student information. The accountability system created through reform was likewise designed to measure whole-school progress, not the progress of individual students. Kentucky is taking steps to transition to a longitudinal data system to meet accountability needs based on both individual student and school-level progress. The infrastructure is largely in place to make this transition but a lack of resources is hindering this effort. The narrative that follows describes Kentucky's technology and accountability strategies, the capabilities and limitations of these systems, and the steps we are already taking to move toward a longitudinal student data system. We then move to a description of the project we hope to have funded, which will move the state much more rapidly to the system it needs.

Where We Are Today

The Kentucky Education Technology System serves 650,000 students, 41,000 teachers, 1,300 schools, 176 district offices, 69 secondary vocational schools, 700 family resource centers and the staff of the Department of Education. The system provides: one high-performance, networked computer for every six students; one high-performance, networked computer for every teacher and an ability to access the network from home; all teachers with training and support; every school with a building-wide, full-function local area network; every classroom with at least four active network drops delivering data services, Internet and e-mail; a phone in every classroom; instructional software available to every desktop from the network; and video in every classroom. Every school is directly connected to the wide area network and every district office has complete local and wide area networking. In addition, every district has a standard, fund-based accounting system.

Before KETS, Kentucky's schools acquired technology as budgets permitted. Advances in technology left schools with a variety of software, hardware, and network components on different computer systems not readily accessible to all who needed them. Because of this, Kentucky's statewide focus has been on creating a technology infrastructure that provides high levels of student access to technology, technological support for assessment delivery and results analysis, improved information management, interagency networking, better family-school communication and an enhanced financial management information system. Initially, KETS blended state-wide coordinated planning with decentralized local education agency (LEA) implementation of technology with the focal point being management rather than analysis. The LEAs were provided with planning guidelines and assistance, but actual decisions on where and how to focus classroom technology were left up to the districts and schools. This approach has led to disconnects within the system.

While most KETS resources have been focused on technology for schools and districts, the Department has also concentrated energy and resources on developing its own technology capacity. It has modernized and expanded its own data collection and storage capabilities. The updated databases operated by the Department and linked to schools and districts via KETS and described below, provide most of the data we need for a viable longitudinal system. The Department has also established a technology development unit, the Office of Education Technology, which both services some operation needs of KETS and provides software and hardware development and management services for the Department. These resources have enabled the Department to meet the data needs of the past decade or so, but they must be enhanced to ensure Kentucky has the capacity to meet the data needs of the future.

Meanwhile, the prevailing accountability model in the 1990's was a cohort comparison methodology that the state embraced in its education reform. This model relied on school-wide testing results collected and reported for certain accountability years. This approach did not promote gathering and using information about the achievement of individual students as much as it did the collection of aggregated information about the performance of schools and districts. When the CATS (Commonwealth Accountability Testing System) was developed, the technology of Value Added Methods did not exist in any usable form, and the cohort comparison method was state of the art.

Because of this emphasis on infrastructure and the cohort-comparison method, we have developed an accountability system that provides only high-level views of student performance. For example:

- We must assume the equivalence of cohorts, a risky assumption.
- Data available on Department systems are usually a current reflection of data in the student or district management systems, and are not updated as data changes in the source systems.
- The system provides counts of students enrolled in courses of particular types (e.g. AP courses) and at particular levels (e.g., 3rd grade) but does not provide information about the demographics of students enrolled (e.g., how many females are enrolled in AP math and science classes).
- The system provides information about the progress of schools and districts, but not about the progress of individual students, and provides no information about the progress of individual students over time.

Kentucky's reform approach - to which we have adhered over time - was to concentrate on the school as the unit of accountability. Accordingly, the data mechanisms we created allowed us to track school progress, but not progress of individual students. However, two dynamics have been pushing Kentucky in a new direction. First, there has been pressure from within the state to add student level accountability. Many people inside and outside the education system believe school level accountability is not viable without also placing responsibility for learning on individual students. In 2002, for example, Kentucky's General Assembly enacted legislation requiring KDE to disaggregate statewide assessment data in order to address closing the achievement gap among student sub-populations such as minorities, students with limited English proficiency, students with disabilities, free and reduced lunch students, and so on.

Second, the federal No Child Left Behind (NCLB) legislation, with its substantial reporting requirements and its mandate to states to reduce achievement gaps among subgroups of the student population, also forces the state to focus on individual student performance. Kentucky therefore embraces the need to establish a longitudinal student data tracking system, and is poised to make this happen over the next three years via federal funding from IES.

Steps in the Right Direction

By adding longitudinal student data tracking capabilities to its current statewide education data system, the Department will be able to determine how thorough the states' overall testing coverage is. This provides a more accurate picture of achievement gaps on an individual student basis. Creating an enrollment database that is separate from the test score database will also help the state keep track of untested students - especially migrant and other students who transfer across districts - making information about dropouts more accurate. Knowing the number of graduates and missing students and having reliable estimates of the likely number of students transferring in and out of districts, the Department can more accurately calculate non-academic data.

Kentucky is already taking an important step toward longitudinal capability by implementing this fall a unique student identifier. This will make it possible to link individual student records over time regardless of the amount of time the student remains in one school or district. Through the longitudinal student data system, constructed through this grant, Kentucky will collect the following information at the student level: fall enrollment, demographic, and program participation data; spring test score data; information on each student who was absent or exempted from testing; high school course completion data; high school SAT, ACT, and Advanced Placement participation and scores; and graduation and dropout data. The state will develop an audit system to monitor the accuracy of the information that school districts provide.

The implementation of this system, and with it the ability to track individual student learning over time, will help schools develop comprehensive school improvement plans that address the instructional needs of all students. Parents will have access to information about their children's progress over time and be capable of making informed decisions about their learning opportunities. Longitudinal data can provide educators with the specific information about strategies and programs that really work in their particular environments.

Ability to Move Forward

Kentucky has the building blocks to create a sophisticated, high quality longitudinal data system but lacks the resources necessary to bring them all together. Many of our existing systems have been developed in isolation, and in order to create a fully functioning longitudinal data system Kentucky needs to bring these many programs and data collections into focus. These systems include:

- MUNIS – financial management
- SSMS – student information system
- CATS –accountability and assessment

Kentucky has numerous additional data collections - an overview is provided in an appendix to this proposal – but these three systems will supply most of the information needed for the new system and will be the focus of the project:

MUNIS – The Department has implemented a statewide, district-level financial system. This includes the statewide education payroll mechanism. While the financial system serves as a good accounting mechanism, it does not link resource allocation to student learning, and cannot be used to inform instructional decision-making.

SSMS – The Department has deployed a standard statewide, district and school-level student information system (STI). This system has collected detailed student demographic information that is used to fulfill the reporting requirements by districts and the state. These data are collected at the district level and submitted to the Department in the form of reports. Not all of the data reach a central warehouse and thus the agency cannot analyze the data on a statewide basis and generate reports or make direct connections to the classroom and individual student learning.

CATS - Kentucky's Office of Assessment and Accountability accumulates—through its contractor CTB-McGraw Hill—extensive test and some demographic data each year on students who have participated in the Commonwealth Accountability Testing System (CATS). This includes most students in the public schools. These data are distributed to the central office in each district, which in turn distributes assessment result reports to schools for analysis and use in planning. The Office draws on these data to judge the progress of schools and districts under the accountability system.

This is a propitious moment for longitudinal data system development because the CATS contract will be negotiated next year and numerous changes may be made. We expect the next generation of CATS to include the kind of longitudinal assessment that involves the comparison of student achievement in one year with achievement by that same student in a prior year. We also expect the redesigned CATS to include end-of-course assessments and online testing.

The federal resources provided through this grant will enable Kentucky to build on these data collections by creating the longitudinal data system it needs for the next era of school and student accountability. Specifically, we will generate the data architecture necessary to establish student records over time, and to produce the portal software necessary for educators, parents, researchers, and others to access and analyze longitudinal data on our students. Such a system

will allow the Commonwealth not just to comply with federal and state data reporting requirements, but will also allow its citizens to design highly effective educational interventions so that all students can reach proficiency. The long-range goal of the Department is to develop a web-based, interactive community of learning centered on classroom practice. This system, the Kentucky Instructional Data System (KIDS), will enhance the collection and reporting of accurate and timely data that include statewide assessment data, enrollment data, and other demographic elements required to meet federal NCLB reporting requirements. Moreover, it will enable educators to match instructional resources to individual student and teacher needs based on accurate data collection and reporting.

Establishment of a longitudinal data system is compatible with long term goals for Kentucky education. Based on national research about improving student achievement, the Kentucky Board of Education has adopted personalized learning as the focus of secondary school reform. The Department is in the process of implementing a technology-enabled individual planning tool for students in Kentucky's public schools. The plan will span grades 6–16 to guide students in their individual learning planning and will incorporate: assessments; course of study; outcomes; student needs; academic and career interests; and supports for successful transition and readiness for post-secondary learning opportunities and work. The longitudinal data system for which KDE seeks funding will enhance the ability of the planning tool to assist students in identifying their needs over time.

Kentucky is poised to make this happen over the next three years via federal funding from IES. KDE has the experience, product expertise and knowledge of the environment to successfully design and implement a longitudinal data system. As noted earlier, KDE has taken numerous steps toward creation of an enterprise-wide data architecture. We have:

- A catalogue of existing the Department data systems
- A central review of data system changes
- A department-wide data quality survey
- Procedures to protect the security, confidentiality and integrity of data
- Procedures to improve the accuracy and timeliness of data, including
    - Employee awareness of confidentiality rules through Non-Disclosure Agreements
    - Procedures to allow data submitters to review data before final approval
    - Automated data quality checks
    - Automated systems to transfer data from district source to the Department
    - A statewide Active Directory system to control user access.
- A statewide, district-level financial system and statewide, district and school-level student information system
- A statewide TCP/IP Wide Area Network (WAN) that connects all school and district computer networks together and to the state network
- A longitudinal data model
    - A quality assurance system, including
    - A glossary of data terms
    - An initial data dictionary
    - A data warehouse
    - An Online Transaction Processing (OLTP) database

The implementation of KETS represented an important step taken to equalize access to rich instructional resources. This ensures that all Kentucky's students are provided with resources to help them learn, such as the implementation of the Kentucky Virtual High School. Much remains to be done. For example, there is still a need to develop a comprehensive data dictionary with associated quality/usage rules and to map all data collection systems to the data dictionary. We need a means to ensure that all data collection systems follow rules and that critical data elements are properly collected. The agency also needs to develop training and documentation to ensure proper use of collected data. These projects, along with the major architecture and software development work, require resources secured through IES.

A longitudinal data system and an associated portal – the KIDS project – will allow Kentucky to solve a problem involving education data. Too often, education entities in Kentucky at the local, district and state levels compile data in isolated silos. This results in little or no interoperability among systems and inefficient use of important data. Compounding the problem is the fact that the K-12 and higher education systems until recently acted independently, resulting in the development of education performance goals and policies in isolation. Different agencies collect data for their own needs and no connection is made to data collected along other segments of the education pipeline. An even broader chasm has existed between the needs of the workforce and the education pipeline. As discussed earlier, the Department is launching a new unique student identifier system beginning with the 2005-2006 school year. This system has been piloted and will become fully operable across the state when students return to class in the fall. Matching a unique student identifier with achievement data for every student is necessary for accurate analyses of student achievement, high quality evaluations, and the ability to monitor and report the progress of subgroups to affect changes in instructional practice so as to close the achievement gaps among sub-groups.

The implementation of this system will provide the first necessary step toward the collection of longitudinal data and the ability to track individual students over the course of their education career. Collection of these data can have a profound impact on student achievement, but only if the information can be funneled through a data warehouse system available to all stakeholders and connected to research-based resources that will directly impact student learning. The Department understands that gathering data alone will not ensure that information is shared among all stakeholders and used regularly to improve instruction and impact student learning. A system must be in place that warehouses data, provides for interoperability across systems and agencies, and makes that data easily available to all stakeholders. Although the agency has developed a system for assigning a unique student identifier, it will need the products generated by funding of this grant in order to use them effectively.

A longitudinal data system will enable Kentucky to make significant progress in student learning through technology. Teachers and students need diagnostic data on demand in order to adjust their teaching and learning processes to respond in a timely manner to the needs of their students. Superintendents and principals need the right assessment and accountability data on demand to adjust district and school instructional practices, and the data must be accurate. Kentucky does not have the information technology in place to accomplish both goals. The current student management system cannot generate reports of the depth and scope needed for instructional reform. The longitudinal data collection system will be implemented as planning

for the overall KIDS network moves forward to bring these resources together in an environment that will encourage further data analysis and application of interventions based on lessons learned.

The first step in this process is to analyze the multiple reporting and decision support needs of our key stakeholders and match them to our existing capabilities. Kentucky has committed to hiring a dedicated business analyst to develop a comprehensive plan for the development of this system. This individual will work with all stakeholders to craft a comprehensive catalogue of current and planned state and local data collection methods and structures and their relationships across agencies and departments.

Without a secure, friendly, and easily accessible user interface, a data warehouse alone is not enough to reform classroom instructional practices. Accordingly, Kentucky Instructional Data System (KIDS) will eventually provide Kentucky students, teachers, administrators, parents, and school staff with a customizable, interactive workspace that gathers and organizes standards-based resources and data for instructional improvement. Additionally, the interactive workspace will support both individual and collaborative learning of many different kinds and be an integral part of the longitudinal data system.

The Department, in conjunction with Kentucky public school teachers and administrators, has identified the need for a system designed to allow educators to share units of study, lesson plans, curriculum maps, assessments, and other educational resources on the Internet via any standard web browser. KIDS will allow busy teachers and students to easily access a deep reservoir of these standards-based resources by

- standard searching;
- asking a focus question (e.g. "How do I organize my teaching;" "How do I support math?");
- keyword (e.g., "Program of Studies"; "MA-H-2.1.4"); and
- the Kentucky Standards and Indicators for School Improvement;

In addition to placing such a wealth of instructional documents at the fingertips of busy teachers, KIDS will also provide online communities of practice and online professional development. Using these online forums, educators will be able to share best practices, solicit expert advice, develop items critical to Kentucky's long term assessment goals, and obtain professional development in the virtual space that is so valuable to the Commonwealth's rural communities.

The Kentucky Instructional Data System will meet these requirements through a robust data warehouse that will allow for interoperability across schools, districts, the state and the U.S. Department of Education. The process for both adding and viewing these resources must be secure, consistent, and require no programming skills.

Kentucky recognizes the long-term nature of this project and is committed to following through on this vision beyond the duration of this grant.

Project Design

The project design leverages the Department's considerable investment in statewide information infrastructure and assessment expertise, making changes where necessary to transform the present static reports-oriented data capture methodology into an event-driven real-time distributed data system, while preserving useful system elements. The overall objective of the project is to produce an online interface that makes it possible to display a variety of assessment reports about individual students, groups of students aggregated by demographic elements, or groups of students aggregated by school and district, accessible by a variety of different system stakeholders including parents, teachers, school administrators, state officials, legislators, and members of the public.

Each of the three years of the project will pursue an overall objective essential to the realization of the overall project objective. In the first year, the objective will be establishment of a data warehouse and associated interface, with longitudinal tracking capabilities.

In order to create the data warehouse, the project will enhance existing systems to make information available within a single system. This will be accomplished by creating new data extraction functionality for some data systems, and by re-engineering data structures of others:

The existing SSMS (STI) school management system produces periodic extracts when district staff submit required reports to the Department. The project will replace this static reporting functionality with an event-driven data upload that will extract and transmit data to the state server when significant changes are made to student records. This will assure that when a new student enters at any point in the state, his or her identification record will be captured system-wide, and will guarantee that changes in student status or demographics are immediately available for analysis.

Data formats of statewide tests will be altered to conform to the requirements of a relational data model. This will facilitate the loading of these data into the warehouse.
As with the SSMS, static reporting procedures used by the district administrative system (MUNIS) will be replaced with event-driven uploads. This will assure that new staff added to the system can be associated with student data, and that appropriate security privileges can be assigned as staff enter or leave the system, or as their status changes.

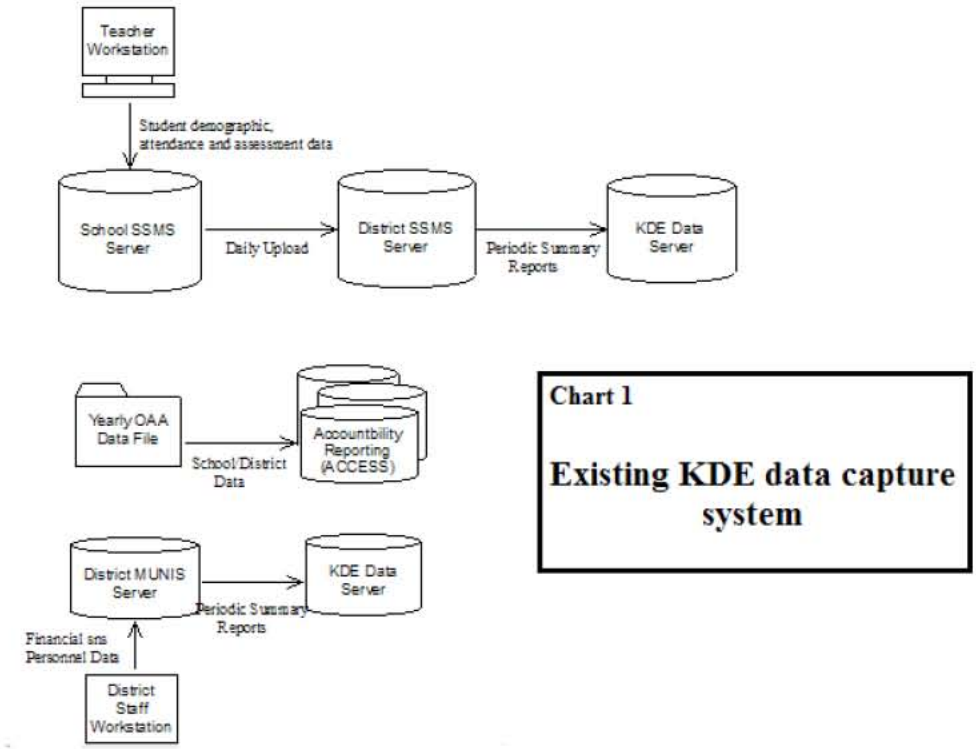

Chart 1

Existing KDE data capture system

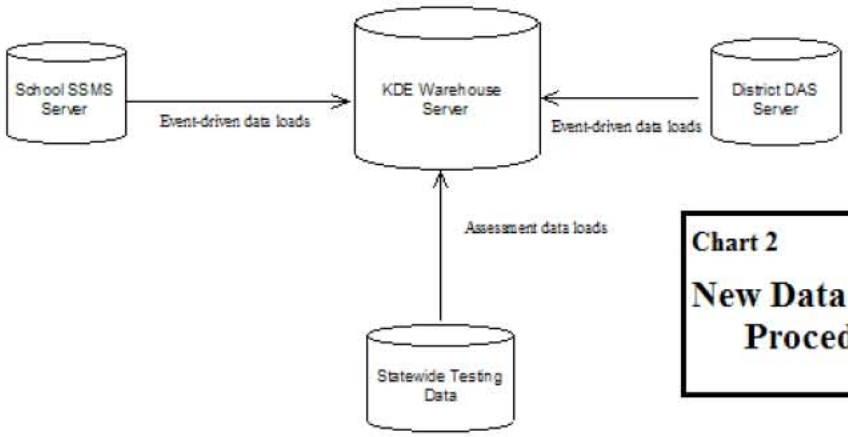

Chart 2

New Data Capture Procedures

Charts 1 and 2 illustrate the initial system improvements to be accomplished by the project. At present, the Department assessment-relevant systems exist as separate school, district, and statewide systems that report information to third parties via packaged reporting mechanisms that require intervention by staff. Information about students requires explicit reporting by school and district staff; information about staff requires explicit reporting by district-level staff; and analysis of student assessment data requires the preparation of one dataset for each of the 1300 schools and 176 districts, which are then incorporated into an Access database. None of these systems communicates with any of the others, and at present it is not possible to use the data to link students to teachers.

Chart 2 shows the eventual data capture procedure the project will develop. The static reporting mechanisms will be replaced with event-driven data extraction and transmittal systems, using XML technology.

The assessment warehouse will use the existing the Department Oracle 9 database. Data elements will be engineered to take advantage of existing database domain coding, to make the assessment information consistent with existing Department data standards and procedures, and to assure reuse of established components. Data management will be the responsibility of existing database administration staff, which will assure that system management functions will continue after grant support has concluded. Additionally, because the existing database is linked dynamically to other systems such as the Education Professional Standards Board certification database, incorporation of the assessment warehouse in this system will assure that additional functionality is immediately available.

The warehouse will include information about teachers and their students, including demographic information; and assessment information, in a longitudinal format. Each student in the system will have a unique identifier that will follow him or her throughout school from preschool to postsecondary education. The state is currently in the process of implementing this unique identifier system.

Security procedures and methods will be implemented to assure that system stakeholders will have access to needed data without violating the privacy of any individual student. Development of specific security policies will be an activity of the project, but security policy and procedure will be guided by the following principles:

1. Persons with access to all system data will be limited to system management staff. These individuals will be required to sign appropriate nondisclosure agreements.
2. Administrative staff will have access to individual student data at the lowest level for which they have management responsibility: principals will thus have access only to school data, superintendents will have access only to data only from their own districts, etc.
3. Persons such as teachers and counselors will have access to data only about the students they serve directly.
4. Parents and guardians will have access to data only about their own children.

Only access to aggregated data will be available to anonymous users and named members of the general public. The system will not display aggregated data involving a subset of 10 students or fewer.

Management of the system will require cooperation from a large number of individuals at the state, district, and school levels. Kentucky has existing data entry and management standards, and conducts regular training for staff involved in the existing data systems, but additional effort will be required. Training will be conducted for staff at all levels of the system to assure that these new responsibilities are managed effectively.

The first rollout of the interface will be accomplished with the first year (2005-2006) of data developed using the new data structures and data capture procedures. Because this will be the first year of implementation of the new longitudinal testing program, some reporting functionality will not be possible in the first year. In this first year, data capture will be demonstrated, and reports will display data only for each individual student for the current year, and for aggregated groups of students for one year.

The focus of the second year of the project will be on the elaboration of the reporting interface. By the end of the first year we will have established a data warehouse capable of containing all of the needed data, and will have demonstrated that we can capture data in an event-driven environment; and we will have created a display interface. This infrastructure development will serve as the foundation for development of reports that incorporate longitudinal data both for individual students and for aggregated groups of students. At this point in time we will have just two years of measurement on any student, but we will create reports that are capable of displaying information for any arbitrary number of years of assessment data.
At the same time, independent assessment contractors will begin development of an item bank, which will provide for additional functionality in the third year of the project. Adequate longitudinal measurement of student achievement requires that tests be vertically scaled so that results can be compared from year to year, and requires that test items be anchored in the curriculum taught to students. In addition, valid assessment of achievement requires that test items be secured against unauthorized disclosure. The test bank will be developed to assure that these requirements are met. Development of the test item bank will involve recruiting and training item developers; creation of mechanisms for evaluating and scaling items; and development of a mechanism for item delivery.

A final activity that will begin in the second year and continue through the third year will be an analysis of methods for connecting the longitudinal view of student achievement to the results of partner systems.

The focus of the third year of the project will be on adding sophisticated test delivery and analysis functionality to the portal, and incorporation of the functionality developed in the course of the project into ongoing Department operations. We anticipate making "testlets" drawn from the state's item bank, that can be used by teachers as formative assessments to evaluate their ongoing instructional efforts. Because these formative assessments will be drawn from the same item bank as the vertically-scaled yearly tests used for accountability purposes, and because all items in the item bank will have been aligned with the academic expectations developed by The Department, results should provide teachers with interim information useful in adjusting their

classroom practices throughout the school year. We believe this practice will maximize the amount of learning that takes place.

In the third year we will develop a value-added reporting mechanism. Because only mathematics and reading assessments information will be collected longitudinally in grades 3 through 8, only teachers who provide reading or math instruction at the primary and middle school levels will be subject to this analysis. The project will acquire the services of experts in hierarchical linear modeling, who will select a value-added methodology, and will specify algorithms to be used in the analysis. To the extent possible, this methodology will incorporate information about student demographics and other non-instructional factors as covariates, to adjust for population, school, and district factors that affect learning. Once the algorithms have been specified, application developers employed by the project will develop software to implement this model and produce reports.

At the end of the project KDE will identify staff to manage the ongoing administration of the new longitudinal assessment system. The following is a snapshot of our projected timelines:

Year 1

Establish the KIDS portal

- Acquire staff
- Establish unique student identifier
  - Create student identifier methodology (completed)
  - Assign student identifiers to students
  - Enter student identifiers into SSMS
- Create real-time data extraction applications
  - Evaluate FIPS schemata for use by data extraction procedures
  - Create event-driven SSMS data extraction procedures
  - Create event-driven DAS data extraction procedures
- Re-engineer OAA data formats
  - Re-engineer state testing data structures
  - Create state test data load procedures
- Create database
  - Create data model
  - Create database objects
  - Test load procedures
  - Load data
- Create security policy and procedures
  - Establish security policies
  - Create security management procedures
  - Create Active Directory structures
  - Load security data
  - Test security procedures

Establish management structure and procedures

- Identify system management staff
- Identify security management staff

Provide training
- Develop a web-based kyeducators.org training module on data quality
- Provide statewide training for management staff at all levels
- Administer web-based kyeducators.org training to teachers, administrators, and other project staff

Year 2

Create reporting functionality
- Create item bank architecture (individual items produced by CATS contractors)
  - Create test generator and scorer
  - Develop item storage data model
  - Develop item data entry procedures
  - Develop item calibration mechanism
  - Develop item security mechanisms
- Create basic student longitudinal performance profile
- Provide training
  - Develop a web-based kyeducators.org module on portal usage
  - Administer web-based kyeducators.org module to teachers, administrators, and other project staff
- Analyze CPE and EPSB information systems for possible later system enhancements
  - Investigate procedures for rolling out student identifiers to institutions of higher education
  - Investigate incorporation of teacher certification and training information

Year 3

Add additional elements
- Create online test administration and scoring capabilities
- Create value-added reporting procedure
- Specify value-added algorithms
- Develop value-added application
- Develop standard value-added reporting

Provide training
- Develop a web-based kyeducators.org module on interpretation of longitudinal reporting
- Administer web-based kyeducators.org module to teachers, administrators, and other project staff

Analyze CPE and EPSB information systems

Project Personnel

The Principal Investigator, Deputy Commissioner Linda France, will have responsibility for insuring the overall quality and success of the project. Ms. France will serve as chair of the oversight committee that will consist of representatives of the collaborating partner agencies such as, the Educational Professional Standards Board, Council on Postsecondary Education,

Education Cabinet and the Long Term Policy Research Center. Upon receiving the award for this project, a Project Manager will be hired through existing state contracts to oversee the overall development of the project. This person will be provided office space and resources within the agency.

The business analyst to be hired by the agency this fall will continue to work through all three years of the project. This individual will work with all stakeholders to craft a comprehensive catalogue of current and planned state and local data collection methods and structures and their relationships across agencies and departments.

Existing staff from the Office of Education Technology, and KDE departments such as, but not limited to, Assessment and Accountability, Virtual Learning, Data Policy Management and Research and Curriculum will be assigned to this project and will work closely with the Project Manager. An existing staff member with an in depth knowledge and history of association with the project from its conception will be designated as the Product Manager.

Much of the expertise needed for this project will come from outside the agency through existing state contracts. Other anticipated personnel needs will include:

Project Manager to manage staff and resources assigned to the project.

Coordinates project activities with organizations within KDE, EPSB, and other partnership agencies.
Schedules the work of project staff, sets milestones and performance criteria, and monitors work to assure these are achieved
Meets regularly with oversight committee and other management staff.
Prepares progress reports and supervises production of media and training products.

Data Modeler

Under the direction of the project manager, this individual will analyze the structure and other characteristics of target data sources,
Design database objects and relationships to store data for use by applications,
Work with database administrators to develop physical data structures in the KDE OLTP and warehouse databases, and
This person must be conversant with one or more automated data modeling tools.

Web Programmers (2)

Under the direction of the project manager, these two individuals will develop web-enabled computer applications that capture and store data, or present data for analysis by end users.

Data Management Specialist

Under the direction of the project manager, this individual will develop methods for extracting, transforming, and transmitting data between disparate information systems,
Identify sources of data error and develops automated solutions to prevent or resolve them, and
Evaluate data captured by the system for quality and consistency

Algorithm Designer

This individual will apply detailed knowledge of mathematical principles in the areas of multivariate statistics and numerical methods to develop procedures for computing measures of school, district, and student performance from raw achievement test and other data.

Multi-variate Statistician

Using information about the types of information available in the database, and other sources of information, this person will identify appropriate statistical models for use in evaluating the performance of schools, districts, and individual students.

Systems Analyst

This person will analyze information systems (such as the CPE data collection system) in order to determine how best to build new functionality to allow KDE to combine its assessment information with information on ACT, SAT and college performance information.

Research Assistant

A research assistant will be engaged to work with the various research efforts related to the project and assist researchers in gathering and assessing data.

Security Analyst

This person will analyze security risks in the light of business requirements and will determine the most feasible way to assure privacy and appropriate use of the data and will develop security management procedures for the system.

The Department as a whole is committed to the success of this project and in designing and implementing a high quality, effective statewide data warehouse model that defines and describes the logical and physical relationships between data items and systems and which can be used by stakeholders to impact student learning. This "whole-agency" buy-in insures collaboration among those who supply, track, store, analyze and report the data to insure that the needs of both data providers and users are met.

Resources

As noted above, Kentucky has made an extensive investment in technology systems over the past fifteen years, resulting in a vertically-integrated statewide system with the potential to collect high-quality, detailed data about schools, districts, teachers, and students. Additionally, the state has a well-developed accountability system with more than fifteen years of experience in administering measurements to all of Kentucky's K-12 population. Kentucky has conducted extensive studies of its data resources at the most detailed level, and has created a data dictionary, prototype data quality standards, and prototype multilevel security systems. The project will harness these systems for the purpose of capturing information about student achievement, and presenting reports that display longitudinal results for individual students and for schools and districts.

We anticipate continuing all of the system components and methods after grant support for the system has ended. Grant support is needed only to make it possible to transform the current cohort-oriented system to a longitudinal system that includes a value-added component. Once this task has been accomplished, new components added with grant support will become routine functions of the ongoing accountability system. Extensive financial support for the accountability systems has been a feature of Kentucky law since 1990, and is expected to continue indefinitely.

Kentucky has extensive accountability and information systems, which will continue after grant support has concluded. Most of the existing funding for these systems is consumed in ongoing operational expenses, leaving only limited funding for the kind of systemic change needed to provide longitudinal assessment. The expenditure of grant funds for this purpose makes it possible for the state to better spend its existing accountability and information systems funds to provide a more detailed view of student, teacher, school, and district performance.

Collaborating Partners

Because the major education data collections reside at the Kentucky Department of Education, the Department has built and operates KETS, and the Department has the most significant IT capacity, this project will be operated within the Department. However, the Department is only one of several major education agencies in Kentucky. Accordingly, the project will have an oversight board that includes representatives of these other entities. This will allow the project to proceed as a collaborative venture, and will enable the other agencies to monitor development of the longitudinal student data system and to begin modifying their own data systems to work with the Department's new data infrastructure. These agencies include:

<u>The Kentucky Education Professional Standards Board (EPSB)</u>

The Education Professional Standards Board is responsible for collecting and maintaining data on Kentucky's teachers, and for determining if teachers are teaching what they have been approved to teach. A recently updated system known as LEAD (for Local Educator Assignment Data) is housed on EPSB servers and is shared with the distributed data system the Department currently maintains. When the Department achieves its longitudinal student data capability, the EPSB will be eager to use this resource to make better evaluations of teacher performance and better decisions about teacher assignments based on its analysis of student achievement results. Another longstanding interest of the EPSB and its constituencies - primarily the 26 teacher-preparation programs at universities and colleges across the state - has been to track the performance of teachers as they leave campuses and teach in public schools. A longitudinal data tracking system will finally enable the EPSB to draw general conclusions about the relative effectiveness of teachers who come from different preparatory programs and alternative certification programs.

<u>The Kentucky Council on Postsecondary Education (CPE)</u>

The Council on Postsecondary Education was established as part of the statewide higher education reform legislation passed by the General Assembly in 1997. The CPE is responsible for governing Kentucky's postsecondary infrastructure, which includes 8 public universities, an

array of community colleges and vocational-technical schools (the latter of which are known as the Kentucky Community and Technical College System), as well as an adult education program. The CPE has maintained its own database since the early 1980s, and has collected basic information about Kentucky's postsecondary students, in particular the courses they have been enrolled in and their grades. While this system has met the reporting needs of CPE, it has never been linked to P-12 students in the state. As a result, the CPE has never been able to gauge the determinants of postsecondary success based on P-12 student performance levels or curricular opportunities. Given the CPE's interest in doing just this, its leadership role in Kentucky's growing P-16 movement, and its general charge to help improve life in the Commonwealth, this agency has a clear stake in the successful development of a statewide longitudinal tracking system.

The Education Cabinet

Having been reestablished through an executive branch reorganization in early 2004, Kentucky's Education Cabinet is a small office that is nevertheless charged with ensuring that the other education agencies and boards are moving in the same direction in terms of policy and planning. Toward that end, the Cabinet has begun convening frequent meetings of top officials of KDE, EPSB, and CPE, so that mutual concerns and policy initiatives can be discussed. In addition, the Education Cabinet secretary serves as a liaison between the agency heads and the Office of the Governor, ensuring that education matters are kept in front of executive branch officials. As the Cabinet grows and matures, it will play an increasingly important role in promoting collaboration across the education agencies through such projects as the development of longitudinal data systems, and encouraging the intelligent use of the information that comes to state agencies about teaching and learning across the Commonwealth.

KIDS Cross-Agency Oversight Board

The KIDS project will empanel a cross-agency oversight body to include representatives of each partner agency. The committee will meet regularly to receive reports on grant implementation progress, to discuss the policy issues that arise, and to prevent potential barriers to creation of the longitudinal data system. This group of upper level decision makers from each agency will work on behalf of the project implementation team to enable policies and practices from each agency to conform to the needs of the new data system.

The Student Data Research Consortium

Though the primary work of this project will involve creation of data system tools, we also request support in the budget for a modest, collaborative research effort. Specifically, we propose establishing a Student Data Research Consortium, comprised of both university-based researchers and agency-based researchers, that will meet on a bi-monthly basis. Consortium work will focus on several roles:

- Informing Kentucky's research community about the construction of the longitudinal data system, and about the possibilities for systematic inquiry that the system will present.

- Providing advice and input to the project team as it conducts its work, to ensure that all data elements necessary for vigorous research are present in the new system and the models that undergird it.
- Commissioning modest exploratory research projects or white papers that provide a theoretical and methodological basis for sound social scientific inquiry based on data produced by the system. Of particular emphasis here will be the potential for value-added type analysis of student performance, and for developing interpretive frames for assisting schools and districts in determining how best to respond to changes in assessment results over time.
- Planning and proposing research projects that can be funded with federal, state, or philanthropic dollars in the future, and that will take advantage of the resources that will be available as the system is constructed.

Kentucky is well positioned to undertake this Consortium project, for several reasons. First, each of the education agencies in recent years has added research staff whose job it is to do this type of collaborative work, and to network with individuals from the state's research universities. Thus, relationships already exist and can be built upon in an organized fashion. Second, each of the agencies has pursued individual research projects along these lines. For example, the EPSB has a project underway involving research staff of the Jefferson County Public Schools and the University of Kentucky, to conduct a fledgling value-added analysis of student data based on district assessment records. Third, the University of Kentucky—the state's flagship research institution—is anticipating establishment of a new Institute for Educational Assessment, which will work closely with the Department in coming years on redesign of the statewide assessment program (CATS). The Consortium will work closely with the IEA over the course of this grant. And fourth, the state's Office of Education Accountability, which historically has concentrated on monitoring reform progress, is expanding its own research office. This will further strengthen research capability within Kentucky, but augurs for a project such as the Consortium so as to enable adequate communication about research work in the state.

At present, we envision the Consortium to include representatives of:

- The Kentucky Department of Education
- The Kentucky Education Professional Standards Board
- The Kentucky Council on Postsecondary Education
- The Education Cabinet
- The University of Kentucky
- The University of Louisville
- The Office of Education Accountability
- The Kentucky Long-Term Policy Research Center

MANAGEMENT PLAN

The Kentucky Department of Education will be the agency responsible for the management of the longitudinal data system project. Staff employed by the project will be supervised by the principal investigator, who is a Department administrator.

Please see the Project Design section of the narrative for timelines and milestones.

Stakeholders have a variety of means of providing feedback. The project will employ two groups: a KIDS cross-agency Oversight Board consisting of representatives of partner agencies, and a Student Data Research Consortium, to oversee research issues related to development of the longitudinal data system. In addition, we will establish ongoing relationships with stakeholders of all types, who will serve as system testers.

The Oversight Board will evaluate the responses gained from feedback groups and the Research Consortium to determine how the project is progressing, and to recommend adjustments necessary to maximize system effectiveness.

In order to evaluate the effectiveness of improving teaching and learning, the Project Manager and the Oversight Board will carefully monitor the formative assessments described in the project plan. In addition, the Research Consortium will design and conduct focused studies.

Kentucky will continue its existing data standard-setting and enforcement procedures, which are in conformance with NCES data standards, and will provide training both to data managers at the district/school level, and to teachers, who will serve as the first-line data-entry staff for some information. For a more extensive explanation, please refer to the Project Plan section of the narrative, which describes in detail our plans for assuring quality data.

The KIDS project enjoys broad collaborative support across a variety of education agencies in Kentucky. The Kentucky Department of Education, the Kentucky Education Professional Standards Board, the Kentucky Council on Postsecondary Education, the Kentucky Education Cabinet, Kentucky's major universities, and other education entities in Kentucky collectively will create the KIDS system. Please see the "Collaborating Partners" subsection of the Resources section for a description of the extensive planned collaboration by the Department's partner organizations.

CURRICULUM VITA

LINDA POWELL FRANCE

PROFESSIONAL EXPERIENCE:

2003 – Present Deputy Commissioner

Oversight of six offices: District Support Services, Education Technology, Academic and Professional Development, Assessment and Accountability, Leadership and School Improvement and Special Instructional Services. She will guide the offices as they provide services in finance, facilities, technology, professional development, curriculum, early childhood, assessment, school-based decision making, exceptional children, federal programs and career and technical education.

1998- 2003 Superintendent

Jessamine County Schools, Nicholasville, Kentucky

Responsible for leaders/zip of six elementary schools, two middle schools, two high schools, one alternative school in a district of 6,800 students.

1991- 1998 Assistant Superintendent for Curriculum

Jessamine County Schools, Nicholasville, Kentucky

Responsible for curriculum, instruction, assessment K-12, Title Programs, Gifted and Talented. Developed Curriculum, Resource Teacher Model for all schools in Jessamine County.

1986-1991 Assistant Principal

Jessamine County Middle Schools, Nicholasville, Kentucky Responsible for curriculum and team leader development, and student discipline at rotating grade levels.

1991 Guidance Counselor
Jessamine County Middle School, Nicholasville, Kentucky

Responsible for guidance program in grades, 7 8 grade. Implemented Advisor-Advisee Program school wide.

1977- Teacher, Ninth Grade English

Jessamine County Junior High School, Nicholasville

Responsible for curriculum, instruction and assessment of 240 students, implemented journal writing into curriculum.

1976-1977 Community Placement Developer

Experienced Based Career Education, Fayette County Schools, Lexington, Kentucky
Responsible for recruiting school-business partnerships for internship placement off juniors and seniors from three Fayette County High Schools.

1973-1977 Leave of Absence to stay home with two young children.

1971-1973 Teacher, Eighth and Ninth Grade English

Winburn Junior High, Lexington, Kentucky

Began teaching at mid-year, responsible for remedial instruction for 6th, 7th,and 8" grade students who were failing English. Moved into teaching grade English the following year. Developed and implemented full speech program.

EDUCATION:

1991 Superintendent Certification
Eastern Kentucky University, Richmond, Kentucky

1986 Certification in Educational Administration

Eastern Kentucky University, Richmond, Kentucky

1985 Rank! Certification in Educational Psychology and Counseling
Eastern Kentucky, Richmond, Kentucky

1976 M. Ed. Counseling and Psychology
University of Kentucky, Lexington, Kentucky

1969 B. A. English and Speech
University of Kentucky, Lexington, Kentucky

PROFESSIONAL DEVELOPMENT AND AFFILIATIONS:

Kentucky Leadership Academy — team member representing Jessamine County Schools

Stephen R. Covey, The Seven Habits of Highly Effective People — trainer.

University of Kentucky System Change Project — Co-Developer of Jessamine

County Schools' Model for Collaboration and Neighborhood Schools.

NASH/Ed Trust K —16 Summer Institute, Kentucky Team Summer Institute

Center for Leadership and School Reform (CLSR). One of six superintendents representing Kentucky in a Bellsouth Network of Superintendents selected from school districts across the Southeastern United States, working directly with Dr. Phillip C. Schlechty.

Kentucky Science and Technology, Board of Directors, Executive Committee Member

Partnership for Kentucky Schools, Design Committee Partnership Schools Project; Design team member for Student Focus Groups

Badgett Regional Cooperative for Educational Enhancement, Design Team Member for Aspiring Women Superintendents' Initiative

All God's Children Board of Directors, Executive Committee

Jessamine County Chamber of Commerce, Board of Directors

Jessamine County Educational Foundation, Board of Directors

Forward in the Fifth, Library Power Board Member

Current Affiliations:

Association for Supervision and Curriculum Development

Kentucky Association for School Administrators

National Association for School Administrators

Kentucky Association for School Superintendents

National Association for School Superintendents

Phi Delta Kappa International

(b)(6)

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502-564-6470 (f)
(b)(6)

Robert F. Hackworth

Summary

Administrator, educator, and technology professional currently project manager for the Kentucky Department of Education and senior consultant for the Kentucky Virtual High School. Robert has a strong background in both technology and education. This skill set allows him to think "outside the box" when planning and guiding projects, making best use of resources. He communicates persuasively and embraces unusual and challenging assignments.

Experience

2003–Present KEANE, Inc. Frankfort, KY

Project Manager, Commonwealth of Kentucky

Provided technical and instructional guidance during development and implementation of the Kentucky Virtual High School, the first statewide online high school in the nation. Provided project management for the Commissioner of Education's special projects

- Served as Project Manager to develop an electronic tool utilizing student transcripts from the Student Attendance application allowing students to gauge their own progress from 6th grade through 12th.
- Provide ongoing assistance to the first online assessment in the nation specifically for students taking a high stakes test (Kentucky Core Content Test) who need special accommodations
- Provided consulting and management for online assessment pilot aimed at enlarging existing online assessment audience to include traditional students
- Provided project management for development of the Kentucky Knowledge Management Portal -- an electronic system linking assessment data and instructional resources while providing students, parents, instructors, and administrators a central location to check student and district progress and find related instructional resources

1999 –2003 SCB, Inc. Frankfort, KY

Project Manager, Commonwealth of Kentucky

Provided technical and instructional guidance during development and implementation of the Kentucky Virtual High School, the first statewide online high school in the nation. Provided project management for the Commissioner of Education's special projects

- Established the first and only online assessment in the nation specifically for students taking a high stakes test (Kentucky Core Content Test) who also require special accommodations
- Provided consulting and project management to enlarge online

assessment audience to include traditional students

- Created, and aided in the creation of, statewide policies governing the College Board's Advanced Placement program
- Created, and aided in the creation of, statewide policies governing online education in Kentucky in relation to public and private school systems
- Founding team member of the Kentucky Virtual High School. The KVHS is nationally and internationally recognized as a leader among peer institutions
- Frequently advise and foster development of online learning institutions in other states and countries
- Host Committee Project Manager for Intel ISEF 2002 Science and Engineering Fair, Louisville, Kentucky. Planned, organized, and managed science-centered presentations for 2500 international K-12 students and instructors

1996 –1999 SCB, Inc. Frankfort, KY

Network Engineer, Project Manager, Commonwealth of Kentucky

Served as a technical liaison and project manager for 24 central Kentucky school districts, including the 2nd largest school district in the state, and the Kentucky Department of Education.

- Developed and approved customized WAN designs incorporating voice, video and data for school districts ranging from 3 to 60 individual sites
- Approved and oversee yearly technology budgets totaling over $33 Million
- Created, and aided in the creation of, state policies governing use and implementation of technology in Kentucky schools
- Provided a liaison between school districts and vendors to ensure maximum capability, best price, and problem resolution
- Provided a liaison between school districts and state government to ensure appropriate representation of district needs and concerns
- Promoted integration of technology and educational curriculum
- Provided leadership and assistance to increase student involvement in LAN/WAN operation to assist existing district staff and increase student interest and skills with technology

1994 –1996 SCB, Inc. Frankfort, KY

Network Engineer

Operated within a small team that spearheaded the successful planning, design, organization, and implementation of the Kentucky Educational Technology System, including standard financial software package.

- Established initial LAN/WAN and internet connections in over three quarters of the 176 school districts in Kentucky
- Assisted planning, development and implementation of statewide TCP/IP range and implementation for 176 districts and 1400 schools

- Successfully installed and configured Novell Netware 3.12 and 4.1 in three quarters of the 176 districts in Kentucky as part of each district's initial connection to statewide WAN
- Successfully installed and supported state financial package (MUNIS) and AIX on IBM RS6000 workstations
- Successfully installed and managed Microsoft Mail/Exchange servers including post office synchronization and name server refresh.

1992 –1994 K.E.D.C. Ashland, KY

Network Technician

Served as a trainer of technical and educational software applications for the Kentucky Educational Development Cooperation and member school districts to support the statewide goal of integration of instruction and technology. Implemented IPX and TCP/IP networks and provided network support. Supported in-house financial and student attendance software applications in 30 member districts.

- Provided multi-district and in-house support/training for various Windows and DOS-based applications including Microsoft Works and ICLAS
- Lead trainer for 70% of software supported by KEDC
- Trained district and KEDC staff in use of graphic/desktop publishing/multimedia software and hardware (scanners, video input/output)
- Conducted MS Windows training sessions at statewide technology conference
- Presented multimedia session at statewide technology conference using Microsoft PowerPoint and IBM Linkway Live
- Achieved Novell Certified Engineer status
- Provided installation and support for Novell Netware in-house and in a 10 district area

Education

1989 –1990 Morehead State University Morehead, KY

- M.A., Master of Arts

1985 –1989 Morehead State University Morehead, KY

- B.A., Bachelor of Arts
- Graduated *Magna cum laude*.

Interests

Sculpture, Photography, Mountain Biking, Computers, Science, Philosophy.

Linda A. Pittenger

(b)(6)
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- email lpitteng@kde.state.ky.us

Professional Experience

2003 to Present
Kentucky Department of Education
Director, Division of Secondary and Virtual Learning

- Provide leadership for statewide initiative to improve the middle and high school experience for Kentucky students, under general direction of the Kentucky Board of Education, leading to establishment of a single rigorous curriculum for all students and successful transition to postsecondary education or the workplace without need for remediation.
- Manage branch responsible for statewide initiative delivering high school and college-level coursework to middle and high school students online, the Kentucky Virtual High School
- Manage branch responsible for ensuring instructional access and equitable learning opportunity for students in alternative placements, including adjudicated youth

2000 to 2003
Kentucky Department of Education
Director, Kentucky Virtual High School and Division of Virtual Learning

- Manage all aspects of statewide initiative delivering high school and college-level coursework to middle and high school students online
- Manage development and delivery of department-initiated online professional development and electronic cadre management
- Administer all contracts for technology and services to support online course delivery and online professional development
- Manage policy formulation and funding mechanisms to support equitable access and participation among the student and teacher population
- Identify opportunities to increase improve teaching and learning and to improve Department services through technology-enabled applications
- Chair, Cross-Agency Design Team for Virtual Learning

1993 to Present
Kentucky Department of Education
Director, Division of Planning Services, Office of Education Technology

- Manage policy formulation and funding mechanisms to support implementation of statewide Master Plan for Education Technology

Professional Affiliation

- Founding Board member, National Council for Online Learning (NACOL), currently serving as member and Secretary of the Executive Committee of the Board

BIO
VIRGINIA G. FOX

Life-long educator and public television executive Virginia G. Fox currently serves as Education Secretary in Kentucky Governor Ernie Fletcher's administration. Secretary Fox, who retired from Kentucky Educational Television (KET) as executive director and CEO in 2002, was Governor Fletcher's first cabinet appointment soon after his election in the fall of 2003.

As CEO of the National Educational Telecommunications Association, Fox became the first female C.E.O. of a national organization in public broadcasting, and was among a group of people involved in the launch of KET in 1968, helping transform it into the largest Public Broadcasting Service member network in the United States. She also served in various executive positions with KET during her 34 years of service.

Prior to her public broadcasting career, Fox spent 4 years as an elementary school teacher and 3 years as elementary school librarian. She received a Bachelor's degree in elementary education, with distinction, in 1961 from Morehead State University. Fox earned her Master's degree, library science, in 1969 at the University of Kentucky.

Both Kentucky and the nation, have benefited from her career.

While at KET, she is credited with developing more programming hours than any other PBS affiliate in the nation. She was responsible for the creation of its G.E.D. program series, which is now available nationwide in its fourth version, and a major source of funding for KET's Foundation. She shepherded KET into the digital age of broadcasting at a time when most PBS network were still using the analog format.

She was the first Cabinet Secretary appointed by Kentucky Governor Ernie Fletcher in December 2003. She served on the Governor's Transition Team, and now manages the *redesigned* Education Cabinet, which has merged all education-related agencies into a common unit to foster cohesiveness, efficiency and communication.

Fox has been the recipient of numerous honors, including the CPB (Corporation for Public Broadcasting) Lifetime Achievement Award, 2002; the Vic Hellard, Jr., Award, presented by Kentucky Long-Term Policy Research Center, 2002; in addition, she received Honorary Doctorates from Pikeville College (2002), Morehead State (1999), and Centre College (2003); and in 1995, Fox was named Appalachian Woman of the year by Morehead State University.

Fox, born in 1939 in Campbellsville, Kentucky, grew up in Fleming County, Kentucky. She is married to attorney Victor Fox and currently lives in Frankfort, Kentucky.

Dr. Phillip S. Rogers, Executive Director
Educational Professional Standards Board

Phillip S. Rogers is a native of Nashville, Tennessee and moved to Scottsville, Kentucky in 1991. He received a B.S. in Counseling from Liberty University in Virginia, an M.A. in Child Development from Western Kentucky University, and an Ed.D. in Education Evaluation from the University of Louisville. He served as the Director of the Allen County School's Family Resource Center from 1991-2000, as a Research Assistant with the Kentucky Institute for Education Research, and evaluation consultant for both state and national organizations. Dr. Rogers was appointed Executive Director of the Education Professional Standards Board (EPSB) effective January 1, 2005. He has been with the EPSB since 2000.

Resume

Terrance L. Hibpshman

(b)(6)

Terry.hibpshman@ky.gov
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Phone: Work – 502-564-4606
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Work Experience

August 2003-present

Database Analyst, Kentucky Education Professional Standards Board

Analyzed agency data, and data from numerous other sources, to answer complex research questions posed by a wide variety of customers. Analyzed recent research in the areas of teacher education and certification, teacher job market analysis, teacher careers, education system performance, and teacher evaluation to advise staff of EPSB and other agencies about policy implications. Conducted original research in the areas of teacher qualifications, teacher careers, and education system performance assessment.

August 2000-August 2003

Director of Technology, Kentucky Education Professional Standards Board

Created and managed a teacher-relevant database describing teacher training, certification, work assignments, and teacher quality. Worked directly with IT staff of the Kentucky Department of Education, The Kentucky Council on Postsecondary Education, and other agencies to develop an integrated multiagency data warehouse. Created innovative web-enabled applications to gather and display teacher certification and assignment information.

September 1992-August 2000

Database Analyst, Kentucky Department of Education

Re-engineered a variety of legacy data systems to produce OLTP and warehouse systems. Performed extensive data modeling and database creation in Oracle, Microsoft SQL Server, and Informix. Worked with application developers to create web-enabled applications and reporting systems. Managed network and database servers.

February 1988-September 1992

Researcher, Kentucky Department of Education

Conducted numerous studies of education systems relevant to the mission of the Kentucky Department of Education.

1985-1990

Statistical consultant, Slosson Educational Publications.

Developed procedures for norming educational and psychological tests, including the Slosson Intelligence Test Revision in 1990. Conducted item analysis, including the use of IRT and traditional methods.

April 1985-February 1988

Program Consultant, Kentucky Office of Vocational Rehabilitation

Conducted evaluation studies. Wrote grants. Designed programs.

February 1979-April 1985

Program Evaluator, Eastern Kentucky Comprehensive Rehabilitation Center

Conducted evaluation studies. Wrote grants. Designed programs. Conducted original research. Designed and implemented multidisciplinary diagnostic and evaluation systems. Provided psychotherapy to a limited caseload. Provided crisis management. Solved institutional problems. Trained psychologists.

September 1977-February 1979

Clinical Psychologist, Eastern Kentucky Comprehensive Rehabilitation Center

Provided psychodiagnostic and psychotherapy services to clients with a wide variety of disabling conditions. Provided crisis management. Designed and implemented diagnostic and screening evaluation systems. Served as everyone's father-confessor.

Education:

Transylvania University, 1975 – B.A. majoring in psychology
Morehead State University, 1977 – M.A. in clinical psychology

Charles E. McGrew

Education

Master of Arts in Sociology
Western Kentucky University, Bowling Green, KY. Conferred 1993.
Thesis Title: *Variables That Influence Retention and Attrition in a Regional University*

Bachelor of Arts in Sociology and Criminology
Western Kentucky University, Bowling Green, KY. Conferred 1990.

Experience

Director, Information and Research
Council on Postsecondary Education, Frankfort, KY 2005-Present

- Coordinate Council research staff to develop reports and analyses regarding the status of higher education in Kentucky.
- Work with Council members to identify, collect, and evaluate measures of effectiveness.
- Coordinate efforts to develop data systems for answering research questions about postsecondary education.

Senior Associate for Program Analysis
Council on Postsecondary Education, Frankfort, KY 2005

- Analyze adult education program performance data.
- Develop program performance goals.
- Identify training needs and opportunities to improve program analysis.
- Consult with administration on statistical issues.

Special Assistant to the Vice President / Director of Institutional Research
Kentucky Community and Technical College System, Versailles, KY 2004-2005

- Coordinated development of new entering and exiting student surveys.
- Analyzed statewide data to identify trends and research initiatives.
- Develop research projects and conduct studies of community college and adult education students.
- Identified key performance indicators.

Director of Institutional Effectiveness and Planning
University of Kentucky – Lexington Community College, Lexington, KY 1999-Present

- Developed the 2004-2007 strategic plan for the College.
- Coordinated development of the institution's first paper and online factbooks.

- Create reports, presentations, and other materials for the President to illustrate specific points about the institution and to persuade legislators, prospective donors, and other entities.
- Supervise the institutional effectiveness and research staff and budget.
- Develop research projects and conduct studies using historic data, surveys, and focus groups to evaluate the effectiveness of policies, programs and other initiatives.
- Coordinate the support for the program review process and serve as institutional effectiveness contact during the SACS process as well as during other program reviews, self-studies, and for separately accredited program site visits.
- Consult with the President and Deans on policy issues.
- Developed a successful Title III Planning Grant and served as P.I. for the project to conduct an educational needs study of 10,000 households and 1,000 businesses in Central Kentucky.
- Analyze census data and various economic indicators to identify likely locations for extended campuses and off-campus teaching sites.
- Develop the LCC portion of the CPE Indicator's report and respond to data requests and questions from the Council.
- Worked with ITS to develop a database for users to enter, update, and assess success of their annual action plans and to provide outcomes reports.

Other Positions in Institutional Research, Effectiveness, and Planning

Director of Institutional Research and Effectiveness Del Mar College, Corpus Christi, TX	1999
Director of Institutional Research and Reporting Roane State Community College, Harriman, TN	1996-1998
Coordinator of Assessment and Evaluation Mississippi State University, Starkville, MS	1993-1996
Research Assistant University of Massachusetts Amherst, Amherst, MA	1992-1993
Institutional Research Coordinator East Tennessee State University, Johnson City, TN	1991-1992

Budget Justification

We are requesting a total of $5,998,350 to be expended over a period of three years. Estimated expenditures by year are:

Year 1 $2,164,025
Year 2 $2,092,500
Year 3 $1,737,500

All individuals, with the exception of the research analyst, hired to work specifically for this program will be highly skilled specialists selected through the existing state contracts. The Business Analyst, hired prior to receiving grant funding, will continue on the project for the remainder of the grant. We have budgeted for approximately 8 months of this persons salary in year 1, or $75,000 to coincide with the beginning date of the grant award. A Project Manager will be hired to manage staff and resources and oversee the entire project. Based on the prevailing contract rate for an individual with these skills we have budgeted $175,000 for the first year of the project, $180,000 and $185,000 for years two and three respectively. This individual will report directly to the Principal Investigator and will be KDE's point of contact. The Project Manager will be tasked with selecting and hiring the other project staff including:

Job	Cost	Duties
Data Modeler	$185,000 per year for two years	whose contributions to the project will include design of database structures and objects necessary to store information about students, teachers, and student assessments
2 Web Programmers	$95,000 each per year for three years	whose essential role will be to develop web-enabled reports and other program elements necessary to the project
Data Management Specialist	$175,000 per year for the first two years of the project	who will be expected to develop procedures for assuring the quality and consistency of data captured from distributed systems
Algorithm designer	$150,000 per year for the last two years of the project	this individual will apply detailed knowledge of mathematical principles in the areas of multivariate statistics and numerical methods to develop procedures for computing measures of school, district, and student performance from raw achievement test and other data
Muti-variate statistician	$150,000 per year for the last two years of the project	using information about the types of information available in the database, and other sources of information, this person will identify appropriate statistical models for use in evaluating the performance of schools, districts, and individual students.
Systems Analyst	$150,000 peer year for the past two years of the project	whose main responsibilities will include analyzing the relationships

Job	Cost	Duties
		between KDE and partner (EPSB, CPE) systems, to investigate later system enhancements
Security Specialist	$250,000 per year for three years	This highly specialized position requires the hiring of an individual with the highest level of skill. The main duties of this job include design of procedures for assuring appropriate access to system reports by the various stakeholders of the system, and design of security management procedures

Training is one of the most important aspects directly related to the success of this system. For development and delivery of adequate training to ensure that the new system will be fully utilized we will hire a Training Program Coordinator for three years at the prevailing contract rate of $55,000 per year. This person will oversee and coordinate all training systems that are developed to meet the needs of the system users.

We propose to develop on-line training for the projected (potential) 50,000 initial users of this data system. Developing and facilitating these training modules will be on-going over the duration of the grant and thus we have budgeted $150,000 per year for three years for this component of the project. The online training will eventually be made available to the more than 1 million stakeholders who are anticipated to have access to the portal when the KIDS program is completely functional. Online training will consist of a series of modules developed for delivery via the EPSB/CPE kyeducators.org website, a long-established online education training system. Portal user training will be provided for the staff of the Office of Assessment and Accountability and the Office of APD. Development and delivery of this training is expected to cost $30,000 per group the first year and $10,000per group each of the last two years of the project. Regional school and district administrator training will be carried out in a face-to-face manner and we have budgeted $45,000 per year for three years to cover those costs (ie. travel and lodging, site rental, training materials, supplies, and so on).

To assist the research efforts related to this grant we will engage a research assistant at a cost of $18,000 per year for three years. This person will most likely be housed in a college of education at a university partnering with the Office of Assessment and Accountability.

Equipment will be a major expenditure in year one and will include the following items:

Item	Cost	Justification
High-end, high-capacity Workstations	$20,000 (includes three-year warranty) for the first year $10,000 each of the last two years for new peripheral equipment such as scanners, wireless networking,	For all personnel listed above. KDE does not have the necessary hardware or software to support the work of the

Item	Cost	Justification
	etc.)	specialized team
Development server	$8500 (includes three-year warranty)	This equipment is needed for development of interfaces, applications, and data capture procedures.
Production server	$50,000 (includes three-year warranty)	This equipment will be the host of the reports-delivery system
Portal	$170,000 (includes three-year warranty) price estimate is based on estimates provided by a previous RFI, and research into the likely cost of portal software under various conditions.	This equipment will house the portal
Software	$320,000 in year 1 and $75,000 in each of the final two years to support ??? What kind of software? Why so expensive? (This stuff is rather specialized and very very high-tech. It simply doesn't come cheap, especially when we get into the security and data management areas)	Software will Include software development systems, data modeling software, data management software, project management software, application testing software, and security systems

Travel costs for the various team members are anticipated to cost $45,000 for each of the three years. This will include travel for conferences, collaboration with partners, presentations to stakeholders, and so on.

An expenditure of $15,000 per year is anticipated for miscellaneous supplies needed by all parties in the daily execution of their job duties.

The Research Consortium that we propose to create will receive $50,000 in support in year one and $100,000 per year for the final two years of the project. This money will be used for development of research papers, presentations, honoraria, travel expenses, and conducting original studies.

Appendix A

Timeline

Year 1

Establish the KIDS portal
- Acquire staff

- Establish unique student identifier
  - Create student identifier methodology (completed)
  - Assign student identifiers to students
  - Enter student identifiers into SSMS

- Create real-time data extraction applications
  - Evaluate FIPS schemata for use by data extraction procedures
  - Create event-driven SSMS data extraction procedures
  - Create event-driven DAS data extraction procedures

- Re-engineer OAA data formats
  - Re-engineer state testing data structures
  - Create state test data load procedures

- Create database
  - Create data model
  - Create database objects
  - Test load procedures
  - Load data

- Create security policy and procedures
  - Establish security policies
  - Create security management procedures
  - Create Active Directory structures
  - Load security data
  - Test security procedures

- Establish management structure and procedures
  - Identify system management staff
  - Identify security management staff

Provide training
- Develop a web-based kyeducators.org training module on data quality
- Provide statewide training for management staff at all levels
- Administer web-based kyeducators.org training to teachers, administrators, and other project staff

Year 2

Create reporting functionality
- Create item bank architecture (individual items produced by CATS contractor)
  - Create test generator and scorer
  - Develop item storage data model
  - Develop item data entry procedures
  - Develop item calibration mechanism
  - Develop item security mechanisms
- Create basic student longitudinal performance profile
- Provide training
  - Develop a web-based kyeducators.org module on portal usage
  - Administer web-based kyeducators.org module to teachers, administrators, and other project staff

- Analyze CPE and EPSB information systems for possible later system enhancements
  - Investigate procedures for rolling out student identifiers to institutions of higher education
  - Investigate incorporation of teacher certification and training information

Year 3

Add additional elements
- Create online test administration and scoring capabilities
- Create value-added reporting procedure
- Specify value-added algorithms
- Develop value-added application
- Develop standard value-added reporting

Provide training
- Develop a web-based kyeducators.org module on interpretation of longitudinal reporting
- Administer web-based kyeducators.org module to teachers, administrators, and other project staff

Analyze CPE and EPSB information systems

Appendix B

EDUCATION CABINET
OFFICE OF THE SECRETARY

Ernie Fletcher
Governor

Capital Plaza Tower, 3rd Floor
500 Mero Street
Frankfort, Kentucky 40601
Phone (502) 564-0372
Fax (502) 564-5959
www.educationcabinet.ky.gov

Virginia G. Fox
Secretary

June 22, 2005

Mr. Gene Wilhoit, Commissioner
Kentucky Department of Education
500 Mero Street
Capital Plaza Tower, 1st Floor
Frankfort, Kentucky 40601

Dear Commissioner Wilhoit:

(Subject: Statewide Longitudinal Data System Grants, CFDA Number 84.372)

Governor Ernie Fletcher joins me in expressing strong support for your application to the U.S. Department of Education for a three-year grant to develop a longitudinal data tracking system and to implement an educator's Knowledge Management Portal.

Kentucky is uniquely positioned to make the best use of these grant funds, due largely to the fact that Kentucky's educational reform efforts began 15 years ago, and as a result, is one of the leading states in data collection.

Nationwide, we must develop a seamless data path between pre-school and post-secondary education that follows individual students from their first day in school. Of course, gathering the data alone will not ensure that it is shared and used to improve both instruction and student achievement. As such, governmental and educational leaders, alike, recognize the need and value of a data system which stores student data in a shared repository and provides the data in an operable format across all agencies and among appropriate stakeholders.

We wholeheartedly support your application to the U.S. Department of Education in order to bridge the gap between data collection and the meaningful application of analysis to improve student performance.

Sincerely,

Virginia G. Fox

Virginia G. Fox

EPSB
Education Professional Standards Board

Ensuring quality educators for Kentucky schools

100 Airport Road, 3rd Floor
Frankfort, Kentucky 40601
Telephone: (502) 564-4606
Toll Free: (888) 598-7667
FAX: (502) 564-7080

June 22, 2005

Mr. Gene Wilhoit, Commissioner
Department of Education
1st Floor, Capital Plaza Tower
500 Mero Street
Frankfort, Kentucky 40601

Dear Commissioner Wilhoit:

On behalf of the Education Professional Standards Board (EPSB), I write in support the Kentucky Department of Education's (KDE's) application to U.S. Department of Education for a $6 million dollar grant to develop a longitudinal data tracking system and to implement an educator's Knowledge Management Portal System.

The Kentucky Department of Education is pursuing the development of a technology-enabled interactive community of learning centered on classroom practice. The Kentucky Instructional Data System (KIDS) is designed to bridge the gap between data collection and the meaningful application of the analysis of that data to improve student performance and boost productivity of the education workforce. The K-12 and higher education data and decision support systems have operated largely in isolation of one another, which increases the risk that expectations, resource allocations and policy will be misaligned. Agencies and institutions collect data for their own needs but few connections are being made along other segments of the education pipeline. An even broader chasm has existed between the needs of the workforce and the education.

In order to insure a seamless path between pre-school and post-secondary education and successful transition into the workforce, information must be gathered on each individual student through an on-going process that begins with their first day in school. Not only must the data be gathered and analyzed, it must have the capability of tracking individual students over the course of their education career (i.e., it must be longitudinal). But gathering data alone will not ensure that information is shared among all stakeholders and used regularly to improve instruction and impact student learning. A system must be in place that holds student data in a shared repository and provides for interoperability across agencies and among stakeholders.

As the EPSB, we are poised, ready, and willing to assist KDE with this worthwhile project. If I can be of further assistance, please don't hesitate to contact me.

Sincerely,

Phillip S. Rogers
Executive Director

An Equal Opportunity Employer M/F/D

Kentucky Council on Postsecondary Education

Ernie Fletcher
Governor

1024 Capital Center Drive, Suite 320
Frankfort, Kentucky 40601
Phone: 502-573-1555
Fax: 502-573-1535
http://www.cpe.ky.gov

Thomas D. Layzell
President

June 30, 2005

Gene Wilhoit, Commissioner
Kentucky Department of Education
1st Floor Capital Plaza Tower
500 Mero Street
Frankfort, KY 40601

Dear Commissioner Wilhoit:

The Kentucky Council on Postsecondary Education strongly supports the Kentucky Department of Education's application for funding to develop a longitudinal student data tracking system that allows cross-agency sharing of student-level data.

The ability to monitor individual student progress seamlessly from pre-kindergarten through postsecondary education will garner benefits on many levels. First, it will enable diagnostic and instructional intervention leading to increased student success and readiness for postsecondary education and skilled employment. It also will furnish invaluable feedback to Kentucky's postsecondary institutions with respect to the quality and adequacy of their teacher preparation and professional development offerings. Third, it will provide a foundation for state policymakers to make and modify education policies that are informed, data driven, and research based. Finally, it will establish a standardized infrastructure for incorporating future data sources.

The Council, the Department, and Kentucky's Education Professional Standards Board are working closely together to raise the level of educational attainment in the Commonwealth, and we welcome the opportunity to support this collaborative initiative.

Very truly yours,

Thomas D. Layzell

KentuckyUnbridledSpirit.com

Kentucky UNBRIDLED SPIRIT

An Equal Opportunity Employer M/F/D

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Marshall Slagle

Executive Director
Michael T. Childress

June 23, 2005

Commissioner Gene Wilhoit
Kentucky Department of Education
Capital Plaza Tower
500 Mero Street
Frankfort, KY 40601

Dear Dr. Wilhoit:

I am writing this letter of support for the Kentucky Instructional Data System (KIDS) and the pursuit of funding for this initiative through the Statewide Longitudinal Data Systems Grant (CFDA Number 84.372) being offered through the Institute of Education Sciences.

The Kentucky General Assembly created the Kentucky Long-Term Policy Research Center in 1992 to enrich understanding of trends and forces influencing the future of the state and to lend an increasingly important long-term perspective to policymaking. The work of the Center includes research, data analysis, strategic planning, coordination and communication with all branches of government, and public outreach. I know that too many decisions and policies are developed without good data and information, which is inefficient and wasteful, and frequently leads to less-than-optimal outcomes. I believe that the Kentucky Department of Education KIDS initiative will provide policymakers, as well as educators, with a wealth of information about student performance, and this will enhance the success of various education related programs and initiatives.

Over the last 12 years, the Kentucky Long-Term Policy Research Center has published hundreds of policy papers on subjects including, but not limited to, education, economic development, health care, and public finance. Nonetheless, the taproot factor that affects just about everything else and will determine the future trajectory of our state is the educational attainment and achievement levels of our citizens. Therefore, I wholeheartedly support Kentucky Instructional Data System (KIDS) initiative because it will bring forth the necessary data to develop and deploy the policies and programs essential for Kentucky's future.

Sincerely,

Michael T. Childress
Executive Director